

WHAT IS CLAIMED IS:

1. A wafer level package comprising:

a device wafer having a micro device, and bonding pads

5 connected to the micro device, which are formed at one surface of the device wafer;

via connectors extending from the bonding pads to the other surface of the device wafer;

10 external bonding pads formed at the other surface of the device wafer and adapted to be connected to the bonding pads through the via connectors, respectively; and

a cap structure bonded to one surface of the device wafer so as to allow the micro device to be insulated and hermetically sealed.

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2. The package as set forth in claim 1, wherein the cap structure has a cavity at a portion corresponding to the micro device.

20 3. The package as set forth in claim 1, wherein the cap structure is a silicon wafer or glass wafer.

4. The package as set forth in claim 1, further comprising:

a sealing member for bonding the cap structure to the device wafer.

5. The package as set forth in claim 4, wherein:

5 the device wafer further has a peripheral metal pad formed around a perimeter of one surface thereof to be bonded to the cap structure; and

the sealing member is a metal material formed on the peripheral metal pad.

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6. The package as set forth in claim 4, wherein the sealing member is a glass frit.

7. The package as set forth in claim 4, wherein the 15 sealing member is a resin based adhesive.

8. The package as set forth in claim 1, wherein the sealing is performed by an anodic bonding technique.

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9. The package as set forth in claim 1, wherein the cap structure has a dry film structure, the dry film structure having a well for receiving the micro device and bonding pads, and a passivation layer applied to an outer surface of the dry film structure.

10. The package as set forth in claim 9, wherein the passivation layer is a material selected from among the group consisting of an epoxy resin, thermosetting resin, metal and photosensitive resin.

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11. A method for manufacturing a wafer level package, comprising the steps of:

a) preparing a device wafer in which a micro device, and bonding pads connected to the micro device are formed at 10 one surface thereof;

b) forming via connectors extending from the bonding pads to the other surface of the device wafer;

c) bonding a cap structure to one surface of the device wafer so as to allow the micro device to be insulated 15 and hermetically sealed; and

d) forming external bonding pads at the other surface of the device wafer, the external bonding pads being connected to the bonding pads through the via connectors, respectively.

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12. The method as set forth in claim 11, wherein the step b) includes:

b-1) forming via holes having a predetermined depth in the bonding pads and hence the device wafer;

13. b-2) applying a conductive material to the via holes  
so as to form the via connectors; and

14. b-3) grinding the device wafer so as to allow the via  
connectors to be exposed to the outside from the other  
5 surface of the device wafer.

13. The method as set forth in claim 12, wherein the  
step b-3) is performed before or after the step c).

10 14. The method as set forth in claim 11, wherein the  
cap structure has a cavity at a portion corresponding to the  
micro device.

15. The method as set forth in claim 11, wherein the  
15 cap structure is a silicon wafer or glass wafer.

16. The method as set forth in claim 11, further  
comprising, after the step b), the step of:

20 e) forming a sealing member for use in bonding between  
the cap structure and the device wafer.

17. The method as set forth in claim 16, wherein:  
the device wafer has a peripheral metal pad formed  
around a perimeter of one surface thereof to be bonded to

the cap structure; and

the sealing member is a metal material formed on the peripheral metal pad.

5 18. The method as set forth in claim 16, wherein the sealing member is a glass frit.

19. The method as set forth in claim 16, wherein the sealing member is a resin based adhesive.

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20. The method as set forth in claim 11, wherein the cap structure is prepared by a process comprising the steps of:

15 f) forming a dry film structure having a well for receiving the micro device and bonding pads, and

g) applying a passivation layer to an outer surface of the dry film structure.

21. The method as set forth in claim 20, wherein the 20 step f) includes:

f-1) forming a side wall structure on one surface of the device wafer by the use of a dry film, the side wall structure having a height not less than that of the micro device so as to encompass a region where the micro device

and bonding pads are formed; and

f-2) forming a roof structure by the use of a dry film, the roof structure covering over the side wall structure.

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22. The method as set forth in claim 21, wherein the passivation layer is a material selected from among the group consisting of an epoxy resin, thermosetting resin, metal and photosensitive resin.

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